Rhode Island Department of Health

Proposed Colorectal Cancer Screening Recommendations

Sonia Uchman, MD, Leslie Cashel, MD, and Joann M. Lindenmayer, DVM, MPH
Published in: *Medicine and Health/Rhode Island , 1997;80(02) 65-67*
Sonia Uchman, MD is Assistant Professor of Medicine, Brown University School of Medicine, and a specialist in gastroenterology and hepatology at Rhode Island Hospital. Leslie Cashel, MD is a gastroenterologist and an Associate Medical Director for Harvard Pilgrim Health Care of New England. Joann Lindenmayer, DVM, MPH is Chronic Disease Epidemiologist, Rhode Island Department of Health, and Clinical Assistant Professor of Community Health, Brown University School of Medicine.

Objective

The Rhode Island Department of Health assembled an Expert Panel on Cancer Screening to advise the Department on revising the State's current cancer control plan, published in 1989. (1) After reviewing the current screening recommendations of national organizations and the most recent pertinent literature, the Panel proposed a recommendation for colorectal cancer screening.

Methods

- Review current colorectal cancer screening recommendations of national organizations.
- Review the most recent literature pertinent to colorectal cancer screening.
- Discuss.
- Propose colorectal cancer screening recommendations for the State's cancer control plan.
- Write a simple rationale for the proposed colorectal cancer screening recommendations.
- Invite comments on the proposed recommendations and rationale.

Current Colorectal Cancer Screening Recommendations:

U.S. Preventive Services Task Force (2)

- Screening for colorectal cancer is recommended for all persons aged 50 and older with annual fecal occult blood testing (FOBT) or sigmoidoscopy (periodicity unspecified), or both.
- Persons with a family history of hereditary syndromes associated with a high risk of colon cancer should be referred for diagnosis and management.

American Cancer Society, American Gastroenterological Association, American Society for Gastrointestinal Endoscopy, American College of Obstetricians and Gynecologists

- For all persons, annual digital rectal examination should begin at age 40, annual FOBT should begin at age 50, and sigmoidoscopy every 3 to 5 years should begin at age 50.

American College of Physicians

- Persons aged 50 to 70 should be offered a variety of screening options depending on local resources and patient preferences. These options include flexible sigmoidoscopy, colonoscopy, or air-contrast barium enema, repeated at 10-year intervals. Annual FOBT should be offered to persons who decline these screening tests.
- There is little benefit of continuing endoscopic screening after age 70 in persons who have been adequately screened up to that age.

American College of Radiology

- Screening with barium enemas every 3 to 5 years is an appropriate alternative to periodic sigmoidoscopy.

Canadian Task Force on the Periodic Health Examination

- There is insufficient evidence to support screening of asymptomatic individuals over age 40, but persons with a history of cancer family syndrome should be screened with colonoscopy.

Proposed Rhode Island Recommendations

- **All persons should receive an annual digital rectal examination beginning at age 40.**
- **All persons 50 years of age and over should receive fecal occult blood testing annually and flexible sigmoidoscopy to 60 cm every 5 years. Persons positive by either screening test should be referred for colonoscopy.**
- **Persons at elevated risk for the development of colorectal cancer should be referred for diagnosis and management if there is:**
    - **a family history of hereditary syndromes associated with a high incidence of colon cancer (polyposis syndromes),**
    - **at least one first degree relative with colorectal cancer,**
    - **a personal history of colon adenomas or colon cancer,**
    - **inflammatory bowel disease involving the colon.**

Rationale

When the Rhode Island Cancer Control Plan for 1990-1992 was published, the Director of Health determined that as of the date of publication of the plan, trials of widespread screening for colorectal cancer had not demonstrated its effectiveness in reducing mortality from the disease. Since that time, results of several studies have provided compelling evidence for the effectiveness of two principal screening tests currently in use for colorectal cancer--fecal occult blood testing (FOBT) and sigmoidoscopy--in reducing mortality from colorectal cancer. Although digital rectal examination is widely used for detecting colorectal cancer, the sensitivity of this test is extremely low, principally because fewer than 10% of colorectal cancers can be palpated by the examining finger. (3) The proposed recommendations are based on the following information:

Established risk factors for colorectal cancer--older age, male gender, inflammatory bowel disease, hereditary conditions such as polyposis syndromes, and having a family history of colorectal cancer--do not lend themselves to prevention. Other potential risk factors such as dietary fat, alcohol, sedentary lifestyle, and obesity are presently under investigation for the primary prevention of colorectal cancer.

Improvements in fiberoptic technology in the past few decades has made it possible to detect premalignant lesions or diagnose colorectal cancer at an early stage. Earlier lesions are now being discovered more frequently than in previous decades. Surgery for colorectal carcinoma can be performed safely, and in-hospital postoperative mortality is low.

There is evidence that persons with early stage disease survive longer than do persons whose disease is detected later on. (4) Therefore, the current primary prevention strategy is to detect and remove precancerous polyps or to detect and treat cancer in its early stages.

Clinical trials of FOBT have demonstrated an increase in the percentage of colorectal cancers detected in earlier stages. (5,6,7) One large randomized study (8) as well as a case control study (9) demonstrated 25 percent and 33 percent reductions, respectively, in colorectal cancer mortality with annual use of FOBT.

Strong evidence exists for the effectiveness of screening with flexible sigmoidoscopy in reducing colorectal cancer mortality. Sigmoidoscopy reduced the risk of death by 59% for cancers within reach of the sigmoidoscope. (10) Screening with short, 35 cm sigmoidoscopes has low sensitivity for the detection of polyps and colorectal cancers, whereas longer, 60 cm sigmoidoscopes can detect 65-75% of polyps and 40-65% of colorectal cancers. A recent cost-effectiveness analysis (11) found that adding flexible sigmoidoscopy at five year intervals to FOBT prevented 2.2 times as many cases of cancer as did FOBT alone, and another recent study also concluded that the interval between screening examinations in asymptomatic, average risk persons can be safely expanded beyond 5 years provided patients have had a carefully performed, negative initial colonoscopy. (12)

A number of studies have demonstrated the effectiveness of FOBT or flexible sigmoidoscopy alone in identifying polyps or colorectal cancer. Compliance with endoscopy, however, is poor. Recommending both FOBT and flexible

sigmoidoscopy may improve compliance and increase detection of a lesion missed by one or the other method.

References

1. Rhode Island Department of Health. *Cancer Control Rhode Island. Plan for 1990-1992.* Providence, RI: Rhode Island Department of Health, 1989.
2. U.S. Preventive Services Task Force. *Guide to Clinical Preventive Services, 2nd ed.* Baltimore: Williams and Wilkins, 1996.
3. Winawer SJ, Shike M. Prevention and control of colorectal cancer. In: Greenwald P, Kramer BS, Weed DL, eds. *Cancer prevention and control.* New York: Marcel Dekker, 1995:537-559.
4. Ries LAG, Miller BA, Hankey BF, *et al.*, eds. *SEER cancer statistics review, 1973--1991: tables and graphs.* Bethesda: National Cancer Institute, 1994. (NIH Publication no. 94-2789.)
5. Thomas WM, Hardcastle JD. An update on the Nottingham trial of faecal occult blood screening for colorectal carcinoma. In: Miller AB, Chamberlain J, Day NE, Hakama M, Prorok PC, eds. *Cancer screening.* Cambridge, United Kingdom: Cambridge University Press, 1991:106-115.
6. Kewenter J, Asztely M, Engarås B, Haglind E, Avanik J, Åhrén C. A randomized trial of faecal occult blood testing for early detection of colorectal cancer: results of screening and rescreening of 51325 subjects. In: Miller AB, Chamberlain J, Day NE, Hakama M, Prorok PC, eds. *Cancer screening.* Cambridge, United Kingdom: Cambridge University Press, 1991:115-25.
7. Kronborg O, Fenger C, Olsen J. Interim report on a randomised trial of screening for colorectal cancer with hemoccult-II. In Miller AB, Chamberlain J, Day NE, Hakama M, Prorok PC, eds. *Cancer screening.* Cambridge, United Kingdom: Cambridge University Press, 1991:126-30.
8. Mandel JS, Bond JH, Church TR, *et al.* Reducing mortality from colorectal cancer by screenng for fecal occult blood. *N Engl J Med* 1993;328:1365-71.
9. Selby JV, Friedman GD, Quesenberry CP Jr, Weiss NS. Effect of fecal occult blood testing on mortality from colorectal cancer: a case-control study. *Ann Intern Med* 1993;118:1-6.
10. Selby JV, Friedman GD, Quesenberry CP Jr, Weiss NS. A case-control study of screening sigmoidoscopy and mortality from colorectal cancer. *N Engl J Med* 1991;326:653-7.
11. Lieberman DA. Cost effectiveness model for colon cancer screening. *Gastroenterology* 1995;109:1781-90.
12. Rex DK, Cummings OW, Helper DJ, Nowak TV, *et al.* 5-year incidence of adenomas after negative colonoscopy in asymptomatic average-risk persons. *Gastroenterology* 1996;111:1178-81.